The Effect of on the Movement of Iodine, Water, Glucose and Starch across Dialysis Tubing

**Observations** for the experiment rationale

* Diffusion is the movement of particles from a concentration to a concentration.
* Osmosis is the movement of across a semi-permeable membrane from a concentration to a concentration.
* Dialysis tubing is selectively permeable, which means that it
* Iodine(KI), water(H2O), glucose and starch are different sized molecules
* Starch is a polymer consisting of many molecules.
* Water and KI are molecules compared to Starch and Glucose. .
* Iodine acts an indicator for starch by changing color.(test it)
* Glucose can be identified by test strips.(test it)

**Question**: How does concentration and size affect the movement of Iodine, Water, Glucose and Starch across Dialysis tubing?

**Purpose:** To determine the permeability and direction of movement of molecules across a semi-permeable membrane.

Use the information above to answer the following questions:

Which two molecules are larger?

Which molecules do you think will cross the dialysis tubing?

**Hypothesis:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ will cross the membrane moving from a \_\_\_\_\_\_\_\_\_\_\_\_

concentration to a concentration because these molecules are small enough to slip through the dialysis tubing.

**Experimental Design:**

Use the two solutions:

Solution 1: Iodine and water

Solution 2: starch(25%) and glucose(10%)

Put one solution in the bag (as demonstrated) and one solution in the beaker (you decide which goes where)

Draw and label a diagram to illustrate the experimental design and the direction of movement which will support your hypothesis.

**Data:**

Title and complete the data table:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Solutions | Initial appearance/tests | Final appearance/tests |
| Beaker |  |  |  |
|  |
| Bag |  |  |  |
|  |

**Analysis:**

What does the direction of movement indicate about the concentration differences in the bag and beaker?

**Conclusion/Discussion**

Complete a bulleted outline for your rough draft which includes the following information:

Bullet the following information:

* Purpose/hypothesis
* Concepts which explain the hypothesis
* Results which do or don’t support the hypothesis
* Discussion of the significance of the results to the concepts behind the hypothesis
* Discussion of technique validity(what went wrong/could be improved)
* Discussion of results validity(what went wrong/could be improved)
* Description of other questions that this technique could be used to investigate